

## **Session 1**

### **Food Security and Challenges to Stored Product Protection**

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#### **Food Safety and Global Challenges to Stored Product Protection – A WFP Perspective**

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DOI 10.5073/jka.2018.463.001

The United Nations World Food Programme (WFP) is the leading humanitarian organization fighting hunger worldwide, delivering food assistance in emergencies, assisting 80 million people in around 80 countries each year. In 2016, WFP delivered 3.5 million MT of food to 74 countries, of which 2.2 million MT travelled by sea. On any given day, WFP operates 5,000 trucks, 20 ships and 70 aircraft. Food is stored in a network of 650 warehouses worldwide and across thousands of retailers and distribution partners globally.

With my 20 years of experience with the WFP and particularly in my present capacity as the Chief of Food Safety and Quality Unit of the organization, I am made cognizant of the food safety challenges posed by a multi-modal international supply chain, particularly exacerbated by exposure to harsh variations in climates - from sub-zero temperatures in Canada and France to high 40's and 50's in Sahel within the span of a few months or sometimes even weeks.

WFP has moved in the last 15 years from providing more-stable “raw” grains products such as cereals and pulses like Maize, Sorghum, Wheat and Lentils to a more sensitive food basket that includes processed foods such as fortified flours, nutritious foods such as ready to eat nutritious pastes to treat malnutrition in infants and young children.

The integrity of these “evolved” products is subject to extremities of food storage in challenging conditions down to the last mile, without the protection of temperature or humidity control and sometimes lacking even the basic pest control programmes. In the best case scenario, this may lead to minor loss in nutrient profile of the product; in the worst, it may compromise the food safety of the product. In this lies a paradox on whether to spend public money to feed people or to provide temperature control in warehouses when the people we serve barely have a roof over their heads.

The next challenge in stored product protection lies in identifying the best possible packaging options to assist in maintaining the product's integrity. Losses incurred within the supply chain, though minimal, significantly comprise factors related to packaging failure; spillage due to improper sealing, product exposure due to inadequate packaging material, and so forth. Globally, food packaging has seen one of the fastest growth rates and innovations in the last decade and WFP is catching up with the best solutions to optimizing packaging while keeping costs within range.

One challenge pertinent to this forum is WFP's work in capacity building in developing contexts. The organization continues to work with governments, private sector food processors and small holder farmers to improve farm to fork food supply chains as well as public procurement platforms. Several food safety issues emanate from the harvest and post-harvest handling, including grass root storage of the produce. In this, the developing countries are also the source of various innovations and yet, still playing catch-up with many practices that are considered basic in developed countries. Pest control, protection against pesticides, appropriate crop drying methodologies all play a part in reducing food safety issues such as elevated mycotoxin levels.

Similarly, food processing industry in some contexts is marred by basic issues such as improper hygiene practices and lack of adequate sanitation facilities, which proliferate food safety issues, accentuated downstream in storage.

Lastly, the inability to detect these issues originates in lack of knowledge and lack of proper infrastructure to be able to identify and test the key food safety markers, which are context-dependent. For example, lack of reliable data on the presence of aflatoxins in maize in one country in East Africa along with the absence of a reference lab within the same country to test aflatoxins has hampered general awareness amongst policy makers and thereby the creation of policies, monitoring tools and mitigation measures – which, by some research estimates, has allowed aflatoxins in the crop to run rampant in the country and may be a primary cause of stunting amongst children.

In our line of work at WFP, food safety needs to be addressed throughout the supply chain, starting from the source. Storage of foods, whether raw or processed, falls under the bigger umbrella of food safety across the supply chain from harvest to consumption.

WFP has been and continues to liaise with the private sector to allow industry best practices to be channeled through its work at the grassroots and to bring about a transfer in knowledge to the people in need.

Yet, I personally believe that the solution to protection of stored foods across the supply chain lies in innovation. WFP strives to innovate in new ways of shortening the supply chain, such as by purchasing more locally and regionally; in packaging through research and development; in storage by using elemental energy to cool temperatures in the warehouses and so on.

WFP is a voluntary funded organization with the mandate of achieving Zero Hunger globally. It serves people in conflict contexts, on the move, malnourished children, pregnant and nursing mothers and some of the most vulnerable populations in the world. We deliver food through barges on Baro river in South Sudan and on the backs of donkeys in Nepal; it is stored under tents and in iron containers. While we strive to deliver the maximum food to these beneficiaries, the onus is also on the organization to provide safe food for consumption in an ever changing context.

## **Food waste and food losses - Importance of international partnerships and research**

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DOI 10.5073/jka.2018.463.002

More than 800 million people are still starving worldwide and around two billion humans are suffering from “hidden hunger”. And the world population continues to grow, thus increasing the demand for food. Additionally, changed consumption patterns in emerging economies and an increased global demand for sustainable raw materials for the non-food area are leading to increased demand and competition for agricultural products. On top of this, global challenges such as climate change are putting considerable pressure on agriculture to adapt. At the same time, food waste and losses is one of the greatest challenges of our times. Around one third of all available food is spoiled or wasted before it is consumed. To improve the nutritional situation and to reduce food waste and losses worldwide in the long term, international cooperation of agricultural and nutritional research institutes, industries and the society is fundamentally important. The German Federal Ministry of Food and Agriculture (BMEL) supports long-term national and international partnerships with the objective to enhance the direct benefit of German research, innovation and technologies to develop high-performance, nutrition-sensitive and sustainable agri-food systems worldwide. The focus of BMEL is on an effective and efficient cross sector information and knowledge exchange to create a bridge between science and the practical application of research results by the society, industry and policy makers.